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FEB 21 2003 SUBCLASS
PATENT & TRADEMARK OFFICE

Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER

Express Mail No. EV170136277US

Inventor(s): Tony N. Frudakis et al. Serial No. 09/534,825 Docket No. 210121-419C7

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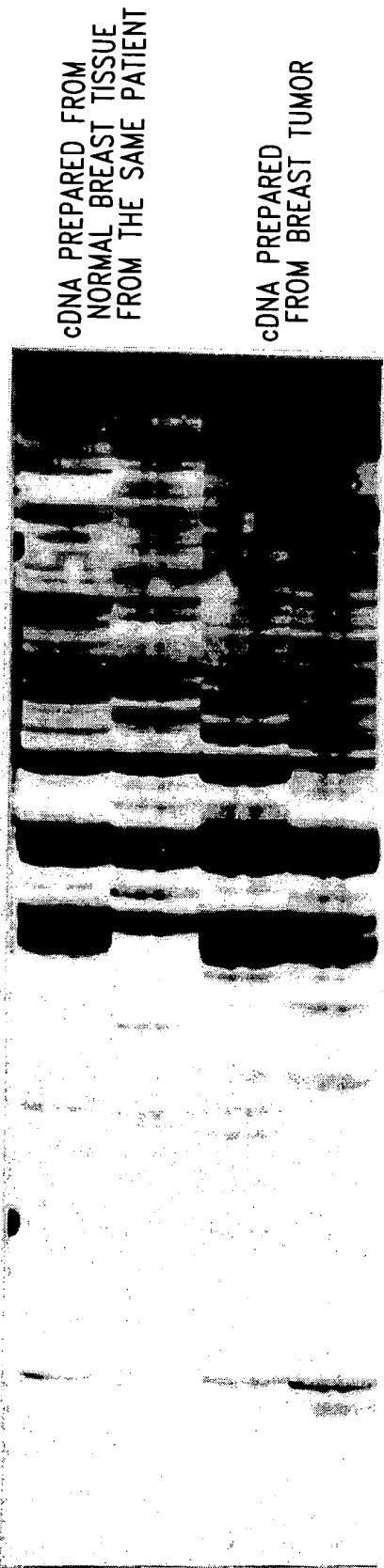


Fig. 1

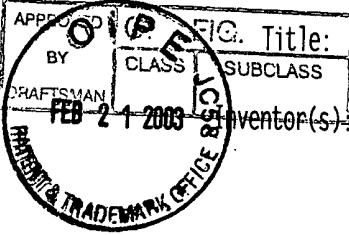


FIG. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER

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BREAST TUMOR mRNA
NORMAL BREAST TISSUE mRNA

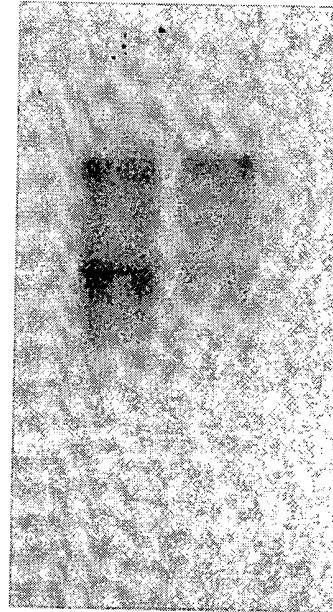


Fig. 2

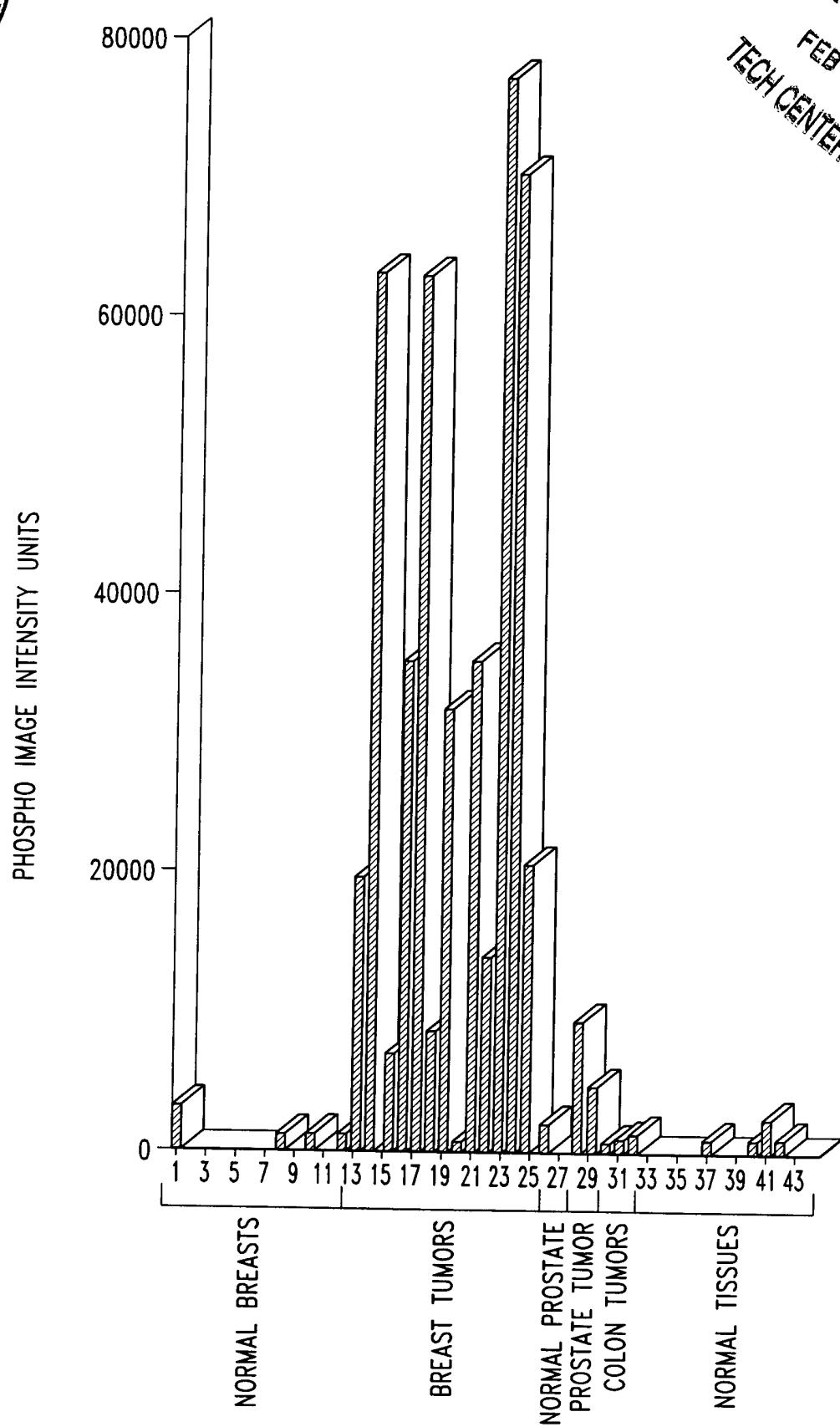
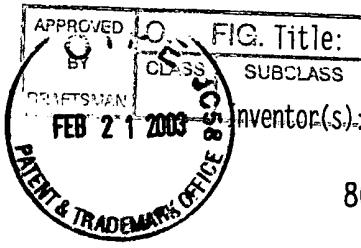


Fig. 3

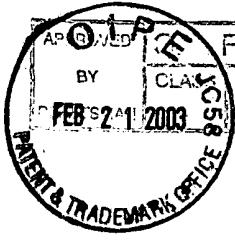


FIG. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
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BY CLAIM Inventor(s): Tony N. Frudakis et al. Serial No. 09/534,825 Docket No. 210121.419C7
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GENOMIC CLONE MAP

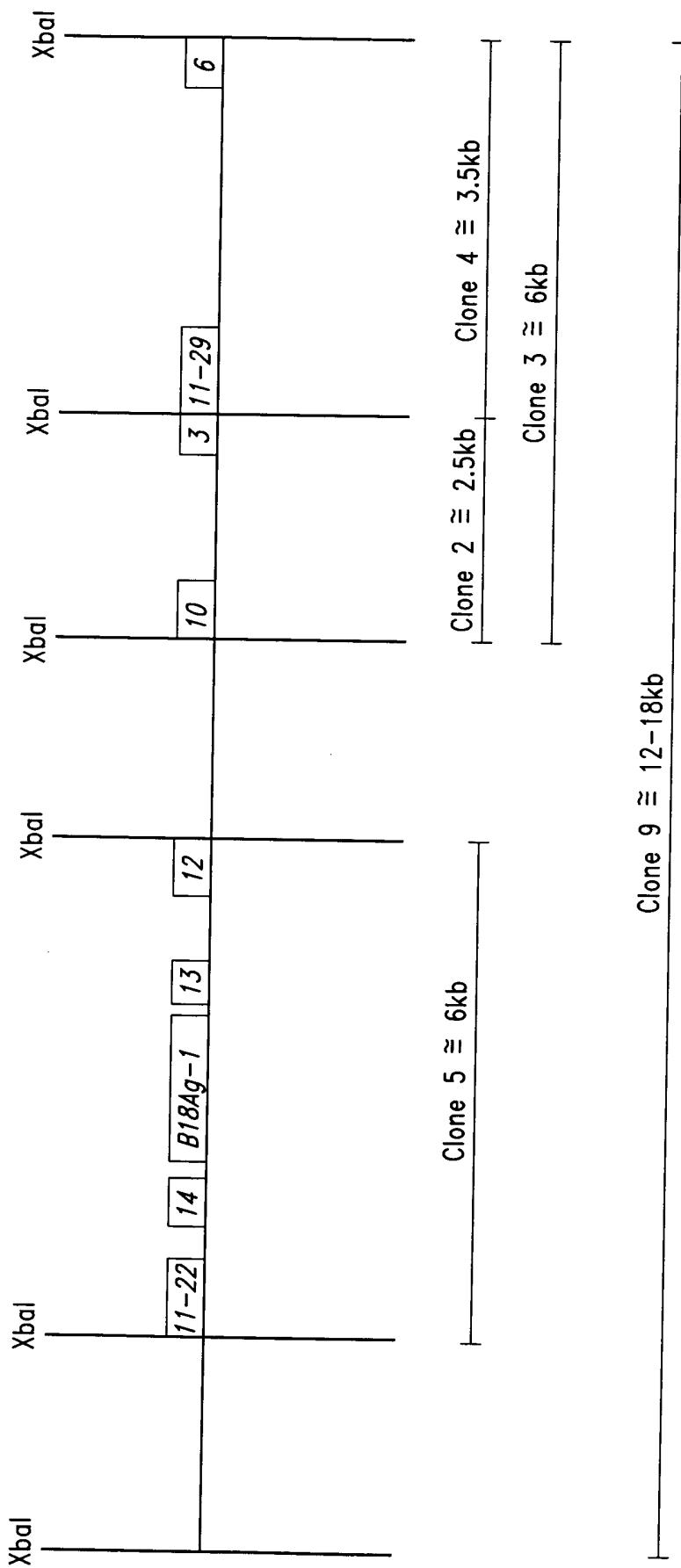


Fig. 4

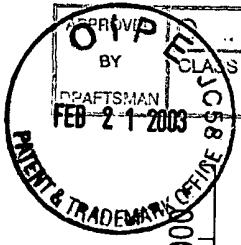
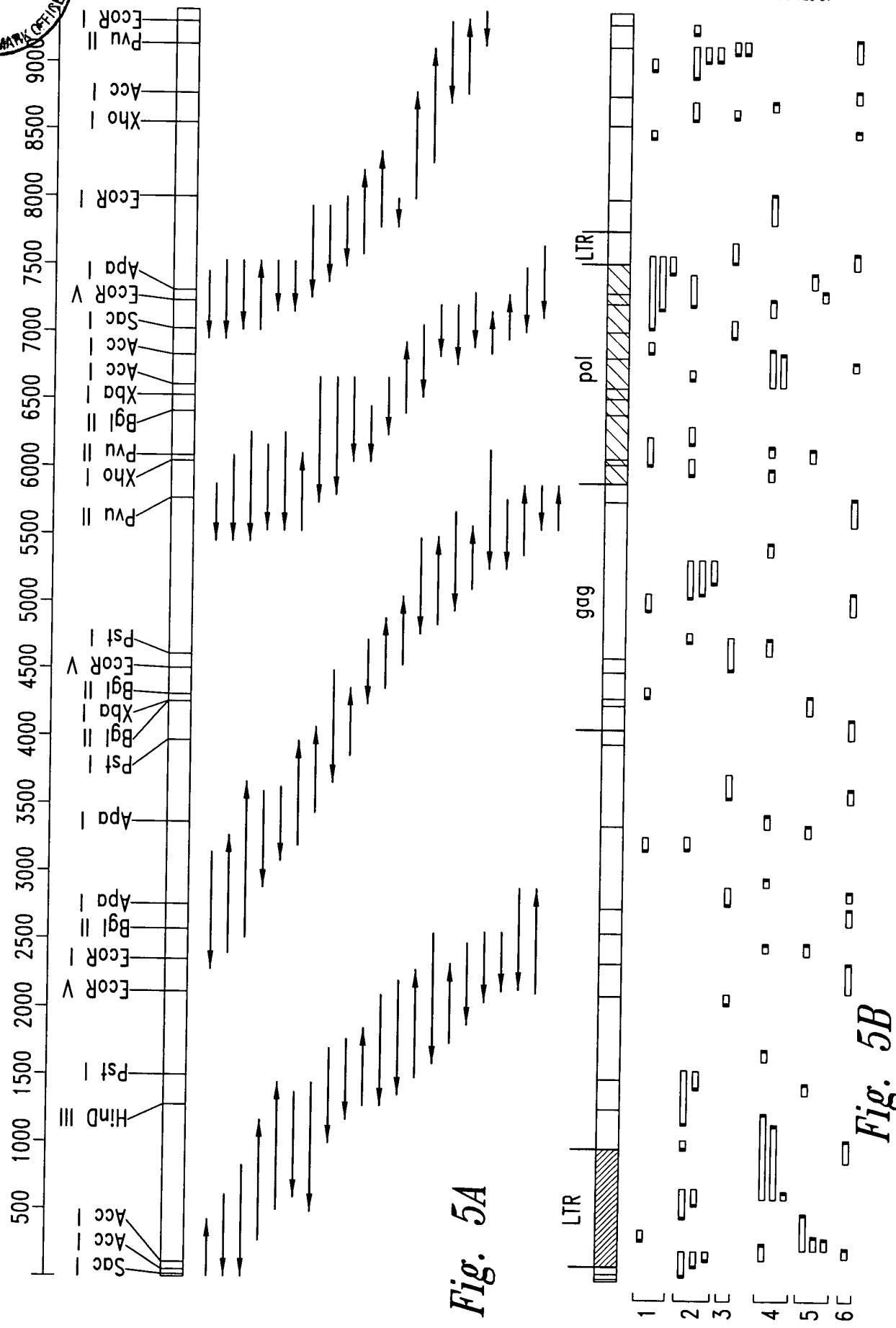


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APPROVED BY FIG. COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER

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FEB 12 2003 Inventor(s): Tony N. Frudakis et al. Serial No. 09/534,825 Docket No. 210121.419C7

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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B18Ag1

TTA GAG ACC CAA TTG GGA CCT AAT TGG GAC CCA AAT TTC TCA AGT GGA	48
Leu Glu Thr Gln Leu Gly Pro Asn Trp Asp Pro Asn Phe Ser Ser Gly	
1 5 10 15	
GGG AGA ACT TTT GAC GAT TTC CAC CGG TAT CTC CTC GTG GGT ATT CAG	96
Gly Arg Thr Phe Asp Asp Phe His Arg Tyr Leu Leu Val Gly Ile Gln	
20 25 30	
GGA GCT GCC CAG AAA CCT ATA AAC TTG TCT AAG GCG ATT GAA GTC GTC	144
Gly Ala Ala Gln Lys Pro Ile Asn Leu Ser Lys Ala Ile Glu Val Val	
35 40 45	
CAG GGG CAT GAT GAG TCA CCA GGA GTG TTT TTA GAG CAC CTC CAG GAG	192
Gln Gly His Asp Glu Ser Pro Gly Val Phe Leu Glu His Leu Gln Glu	
50 55 60	
GCT TAT CGG ATT TAC ACC CCT TTT GAC CTG GCA GCC CCC GAA AAT AGC	240
Ala Tyr Arg Ile Tyr Thr Pro Phe Asp Leu Ala Ala Pro Glu Asn Ser	
65 70 75 80	
CAT GCT CTT AAT TTG GCA TTT GTG GCT CAG GCA GCC CCA GAT AGT AAA	288
His Ala Leu Asn Leu Ala Phe Val Ala Gln Ala Ala Pro Asp Ser Lys	
85 90 95	
AGG AAA CTC CAA AAA CTA GAG GGA TTT TGC TGG AAT GAA TAC CAG TCA	336
Arg Lys Leu Gln Lys Leu Glu Gly Phe Cys Trp Asn Glu Tyr Gln Ser	
100 105 110	
GCT TTT AGA GAT AGC CTA AAA GGT TTT	363
Ala Phe Arg Asp Ser Leu Lys Gly Phe	
115 120	

Fig. 6

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B17Ag1

GC TGGGCACAGT GGCTCATACC TGTAATCCTG ACCGTTTCAG AGGCTCAGGT	60
CG CTTGAGCCCCA AGATTCAAG ACTAGTCTGG GTAACATAGT GAGACCCTAT	120
AA AAATAAAAAAA ATGAGCCTGG TGTAGTGGCA CACACCAGCT GAGGAGGGAG	180
CT AGGAGA	196

Fig. 7

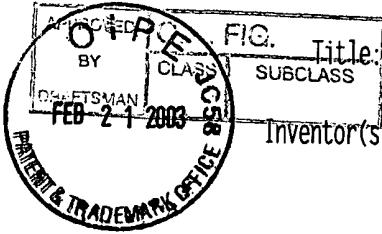


FIG.
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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B17Ag2

GC TTGGGGGCTC TGACTAGAAA TTCAAGGAAC CTGGGATTCA AGTCCAATG 60
AC TTACACTGTG GNCTCCAATA AACTGTTCT TTCTTATTCC CTCTCTATTA 120
AA GGAAAACGAT GTCTGTGTAT AGCCAAGTCA GNTATCTAA AAGGAGATAC 180
AT TAAATATCAG AATGTAAAAC CTGGGAACCA GGTTCCCAGC CTGGGATTAA 240
CA AGAAGACTGA ACAGTACTAC TGTGAAAAGC CCGAAGNGGC AATATGTTCA 300
TT GAAGGATGGC TGGGAGAATG AATGCTCTGT CCCCCAGTCC CAAGCTCACT 360
CT CCTTATAGC CTAGGAGA 388

Fig. 8

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B13Ag2a

GC CTATAATCAT GTTTCTCATT ATTTCACAT TTTATTAAACC AATTCTGTT 60
AA AATATGAGGG AAATATATGA AACAGGGAGG CAATGTCAG ATAATTGATC 120
TG ATTTCTACAT CAGATGCTCT TTCTTCTCT GTTTATTCC TTTTATTTC 180
GG TCGAATGTAA TAGCTTGTT TCAAGAGAGA GTTTGGCAG TTTCTGTAGC 240
CT GCTCATGTCT CCAGGCATCT ATTTGCACTT TAGGAGGTGT CGTGGGAGAC 300
CT ATTTTTCCA TATTTGGGCA ACTACTA 337

Fig. 9

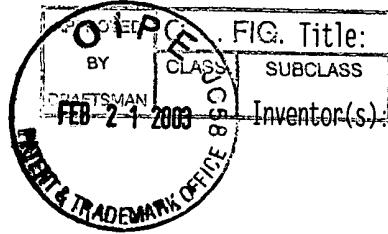


FIG. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER

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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B13Ag1b

GC CATACTAGTGC CTTTCCATT ATTAAACCCC CACCTGAACG GCATAAACTG 60
GC TGGTGTTTT TACTGTAAAC AATAAGGAGA CTTTGCTCTT CATTAAACC 120
AT TTCACTATTTT ACGCTCGAGG GTTTTACCG GTTCTTTTT ACACTCCTTA 180
TT TAAGTCGTTT GGAACAAGAT ATTTTTCTT TCCTGGCAGC TTTAACATT 240
TT TGTGTCTGGG GGACTGCTGG TCACTGTTTC TCACAGTTGC AAATCAAGGC 300
CC AAGAAAAAAA AATTTTTTG TTTTATTGA AACTGGACCG GATAAACGGT 360
CG GCTGCTGTAT ATAGTTTAA ATGGTTTATT GCACCTCCTT AAGTTGCACT 420
GG GGGGNNTTG NATAGAAAGT NTTTANTCAC ANAGTCACAG GGACTTTNT 480
NA CTGAGCTAAA AAGGGCTGNT TTTGGGTGG GGGCAGATGA AGGCTCACAG 540
TC TCTTAGAGGG GGGAACTNCT A 571

Fig. 10



O. . F. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
BY CLASS SUBCLASS
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DEPARTMENT OF COMMERCE Inventor(s): Tony N. Frudakis et al. Serial No. 09/534,825 Docket No. 210121.419C7
PATENT & TRADEMARK OFFICE

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B13Ag1a

TA ATAACTTAAA TATATTTGA TCACCCACTG GGGTGATAAG ACAATAGATA 60

TT TCCAAAAAGC ATAAAACCAA AGTATCATAc CAAACCAAAT TCATACTGCT 120

CC GCACTGAAAC TTCACCTTCT AACTGTCTAC CTAACCAAAT TCTACCCCTTC 180

GG TGCGTGCTCA CTACTCTTT TTTTTTTTT TTTNTTTGG AGATGGAGTC 240

CA GCCCAGGGGT GGAGTACAAT GGCACAACT CAGCTCACTG NAACCTCCGC 300

TT CATGAGATTc TCCTGNTTCA GCCTTCCCAG TAGCTGGGAC TACAGGTGTG 360

TG CCTGGNTAAT CTTTTTNGT TTTNGGGTAG AGATGGGGGT TTTACATGTT 420

TG GTNTCGAACT CCTGACCTCA AGTGATCCAC CCACCTCAGG CTCCCAAAGT 480

TA CAGACATGAG CCACTGNGCC CAGNCCTGGT GCATGCTCAC TTCTCTAGGC 540

Fig. 11

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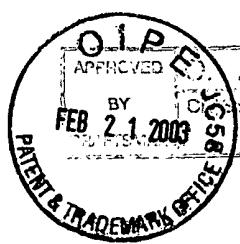


FIG. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
Express Mail No. EV170136277US
Subclass 638 Inventor(s): Tony N. Frudakis et al. Serial No. 09/534,825 Docket No. 210121.419C7

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B11Ag1

TG CACATGCAGA ATATTCTATC GGTACTTCAG CTATTACTCA TTTTGATGGC 60
AG CCTATCCTCA AGATGAGTAT TTAGAAAGAA TTGATTTAGC GATAGACCAA 120
GC ACTCTGACTA CACGAAATTG TTCAGATGTG ATGGATTTAT GACAGTTGAT 180
GA GATTATTAAG TGATTATTT AAAGGGAATC CATTAATTCC AGAATATCTT 240
TC AAGATGATAT AGAAATAGAA CAGAAAGAGA CTACAAATGA AGATGTATCA 300
TA TTGAAGAGCC TATAGTAGAA AATGAATTAG CTGCATTAT TAGCCTTACA 360
TT TTCTGTGATGA ATCTTATATT CAGCCATCGA CATAGCATTA CCTGATGGC 420
GA ATAATAGAAA CTGGGTGCGG GGCTATTGAT GAATTCATCC NCAGTAAATT 480
AC AAAATATAAC TCGATTGCAT TTGGATGATG GAATACTAAA TCTGGCAAAA 540
GG AGCTACTAGT AACCTCTCTT TTTGAGATGC AAAATTTCT TTTAGGGTTT 600
CT ACTTTACGGA TATTGGAGCA TAACGGGA 638

Fig. 12



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FIG. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA3c

ACTGATGGAT GTCGCCGGAG GCGAGGGGCC TTATCTGATG CTCGGCTGCC TGTCGTGAT	60
GTGCGCGGCG ATTGGGCTGT TTATCTAAA CACCGCCACG GCGGTGCTGA TGGCGCCTAT	120
TGCCTTAGCG GCGGCGAAGT CAATGGCGT CTCACCCAT CCTTTGCCA TGGTGGTGGC	180
GATGGCGGCT TCGGCGGCGT TTATGACCCC GGTCTCCTCG CCGGTTAACCA CCCTGGTGCT	240
TGGCCCTGGC AAGTACTCAT TTAGCGATT TGTCAAAATA GGCGTG	286

Fig. 13

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B9CG1

AG CAGCCCCCTTC TTCTCAATT CATCTGTAC TACCTGGTG TAGTATCTCA	60
CA TTTTATAGC CTCTCCCTG GTCTGTCTT TGATTTCT GCCTGTAATC	120
AC ATAACTGCAA GTAAACATT CTAAAGTGTG GTTATGCTCA TGTCACTCCT	180
AA ATAGTTCCA TTACCGTCTT AATAAAATTG GGATTTGTTCTTNTATTN	240
CA CCTATGACCG AA	262

Fig. 14



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B9CG3

AG CAAAGCCAGT GGTTTGAGCT CTCTACTGTG TAAACTCTA AACCAAGGCC 60
TA AATGGTGGCA GGATTTTAT TATAAACATG TACCCATGCA AATTCTAT 120
GA TATATTCTTC TACATTTAAA CAATAAAAAT AATCTATTT TAAAAGCCTA 180
AG TTAGGTAAGA GTGTTAATG AGAGGGTATA AGGTATAAT CACCAGTCAA 240
TG CCTATGACCG A 261

Fig. 15

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B2CA2

CGACGTCGGT AAAATCGGAC ATGAAGCCAC CGCTGGTCTT TTCTGTCGAG CGATAGGC 60
CGGCCAGCCA GCGGAACGGT TGCCCGGATG GCGAAGCGAG CGGGAGTTCT TCGGACTGAG 120
TATGAATCTT GTTGTGAAAA TACTCGCCGC CTTCGTTCGA CGACGTCGCG TCGAAATCTT 180
AATCATGGTT GAGCCGGATG CTGCCCCGA AGCCCT 276

Fig. 16



FIG. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA1

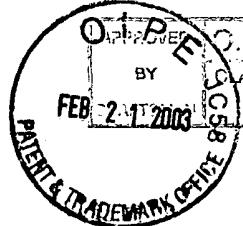
CCCAGGTCAA CCAGGCTGCA ACACGCAGGT CCTGGATTG GGCACGAAGC AGCGCTTCGC 60
TGTTTCCAG GATTTAAC CAGTCGGTCT GGCGTTCTC ATGGAGCGAG AGCGCCTTGC 120
CCAGCTCATT TTCCAGCGCC TCGTATTGCG TGAAAAAACG CACATCCTCA CCCGCAAAGA 180
CATCCTTGA AATCGGCTGT TCCGCGAGTT CCAGATANTG CGAGGAGAGC TTGCTCGAAT 240
AGGTCACTCCT AACCCCTCAA TGCACACCAT GTGCGCCAAT GAATATCTTA ACAATTCAAC 300
TAGTTGGCAT AANAACCGAA CGAAAATCCC AATAGTCTGA AGAGCTTT TG 352

Fig. 17

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA2

CTGCATGTCC ACGGCCTGGA TTTACGGGTG GTCGGCGTTC ACCCTGGCA GCTGGCGGCTC 60
TTCCCGACCA GGCCCAGCAG GATGTGTGGG GCAAGGATAA CGGCGTGCCTC ATCGCCTCGA 120
CCTATATGCC TACTGGCAAG GCCGAGCCCG TGGAAGGCGG ATTCAAGGTTT ANCAGTCGCT 180
GGAGCTTTTC CACCGGCTCC ATGCATTGTG ACTGGCTGTT TCTAGGGGGT CTGTTGCCA 240
AGCGTGATGG TACGTCTGGC CTGGAGCATG TGACTTTCTG 280

Fig. 18



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA3

AG GGAGCAAGGA GAAGGCATGG AGAGGCTCAN GCTGGTCTG GCCTACGACT 60

CT GTGCCGGGG ATGGTGGAGA ACTGAAGCGG GACCTCCTCG AGGTCTCCG 120

TC NCCGTCCAGG AGGAGGGTCT TTCCGTGGTC TNGGAGGAGC GGGGGGAGAA 180

TC ATGGTCNACA TCCC 204

Fig. 19

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B4CA1

TC AGGAGCGGGT AGAGTGGCAC CATTGAGGGG ATATTCAAAA ATATTATTT 60

TG ATAGTTGCTG AGTTTTCTT TGACCCATGA GTTATATTGG AGTTTATTT 120

CC AATCGCATGG ACATGTTAGA CTTATTTCT GTTAATGATT NCTATTTTA 180

GA TTTGAGAAAT TGGTTNTTAT TATATCAATT TTTGGTATTT GTTGAGTTG 240

GC TTGAGTATGTG ACCA 264

Fig. 20



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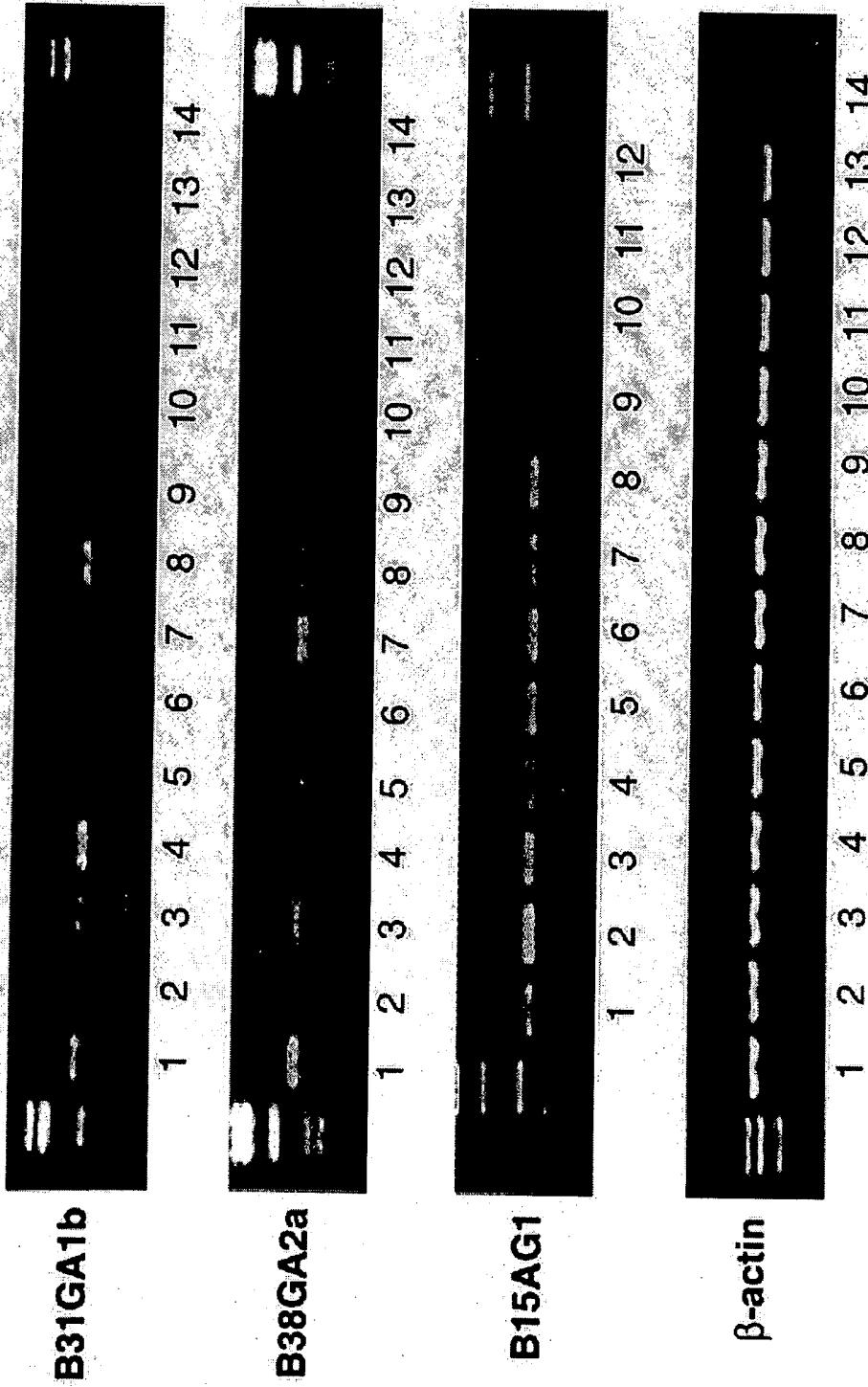
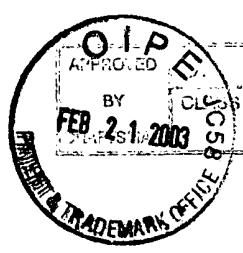


Fig. 21A



C. Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
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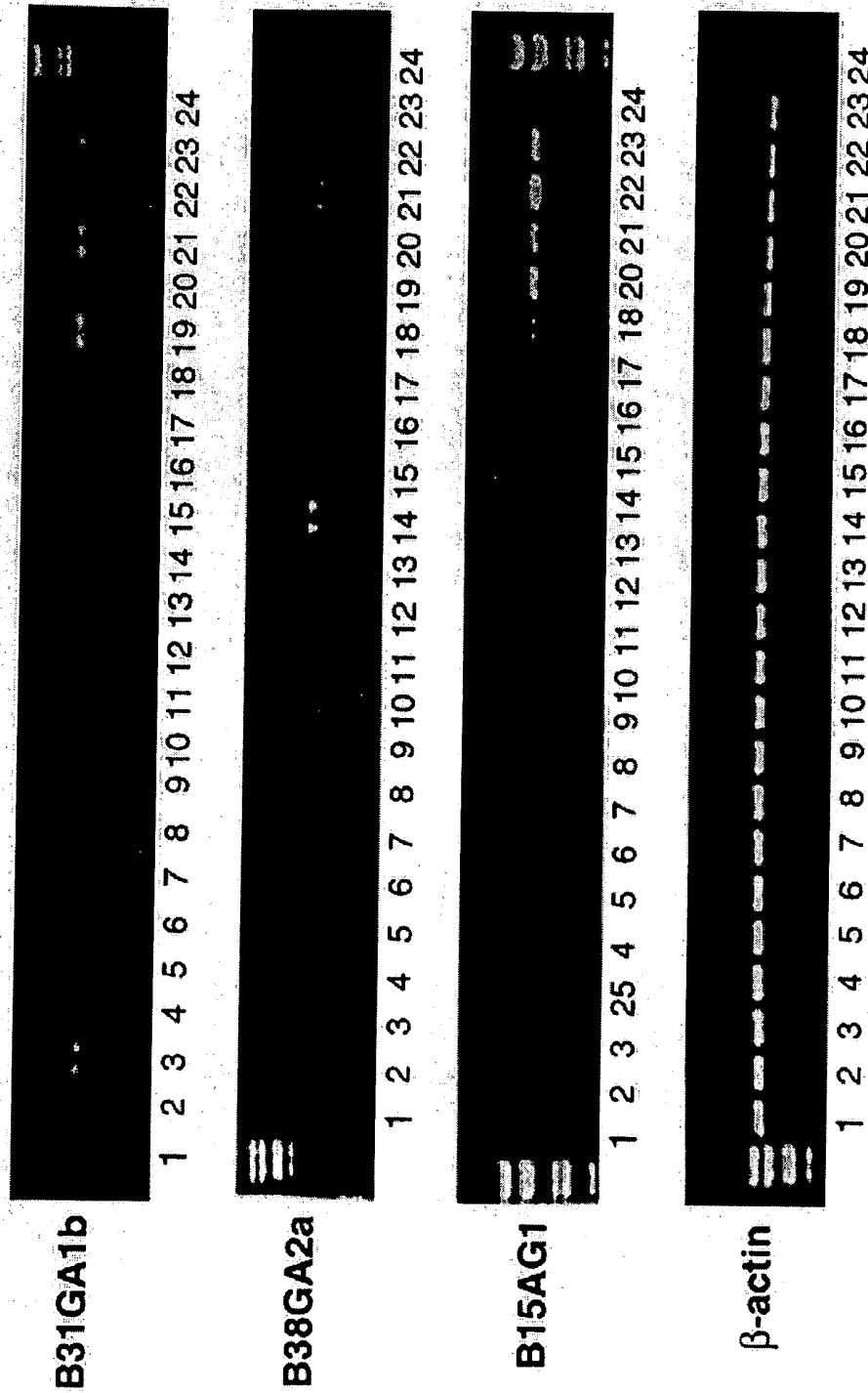


Fig. 21B



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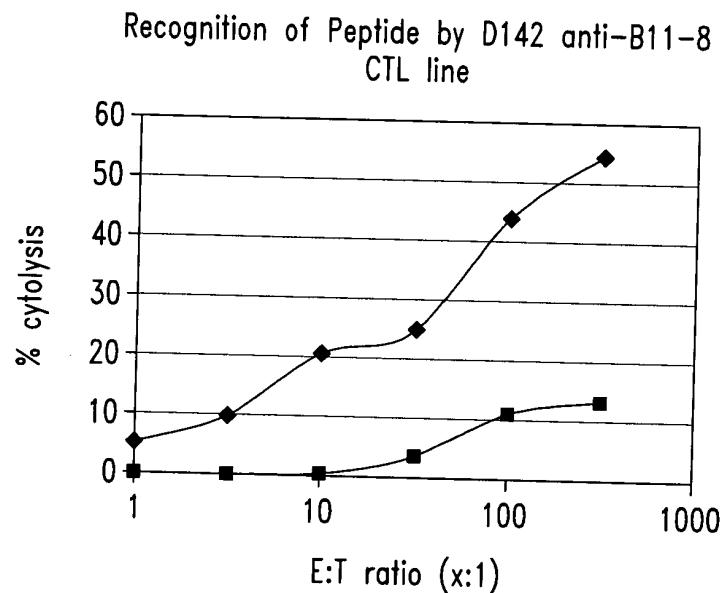


Fig. 22



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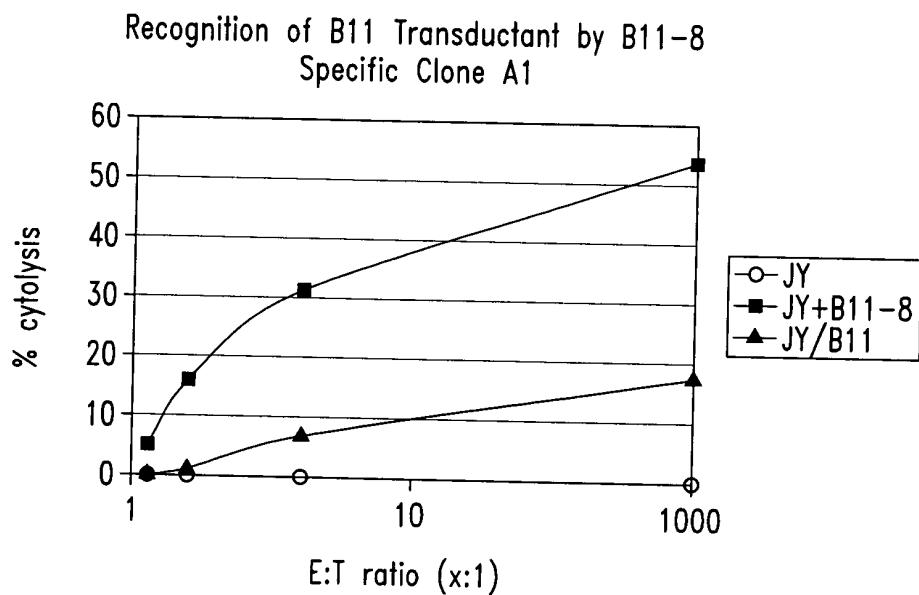


Fig. 23



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